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A position measuring device for generating position-dependent output signals that includes a scanning element by which a scanning plane is defined and a measuring graduation movable relative to the scanning element and defining a measuring graduation plane. The position measuring device further includes a regulating device for regulating output signals to constant signal amplitudes, in that the regulating device acts upon a predetermined controlling variable, to which end the requisite value of the controlling variable for the purpose of regulating is ascertained continuously by the regulating device.